



# HYSOL<sup>®</sup>

## Electronic Formulated Liquid

Formerly Dexter

### 1.0 DESCRIPTION

Hysol<sup>®</sup> RE2039 and Hysol<sup>®</sup> HD3719 is an undiluted low viscosity epoxy casting system which offers long pot life, easy 1:1 mixing ratio and large mass casting capability.

Hysol<sup>®</sup> EE4183 and Hysol<sup>®</sup> HD3719 is a filled version of this system for lower shrinkage, lower coefficient of expansion and improved thermal conductivity.

Colored versions of these two systems are listed below. All handling and cured properties are unaffected by color.

Unfilled: RE2039 based: EE4210 Black

Filled: EE4183 based: EE4190 Red, EE4207 Blue, EE4215 Black

### 2.0 TYPICAL UNCURED PROPERTIES

	RE2039	EE4183	HD3719	TEST METHOD
Color, maximum	Gardner 4		Gardner 12	ASTM D 1544
Color		Tan		Visual
Filler content, %	0	48-52	0	ASTM D 2584
Specific Gravity @ 25°C (77°F)	1.15-1.17	1.50-1.65	0.95	ASTM D 1475
Viscosity @ 25°C (77°F)				ASTM D 2393
Brookfield RVF				
Spindle 5, Speed 20 cps	10,000-16,000			
Spindle 6, Speed 10 cps		60,000-100,000		
Spindle 2, Speed 20 cps			350-500	
Shelf Life @ 25°C				
(77°F), months				
min. from date of shipment	12	6	12	

**3.0 TYPICAL CURED PROPERTIES** – Values are not intended for use in preparation of specifications. All measurements taken at 25°C (77°F) unless otherwise noted. Contact your local Dexter Electronic Materials representative for information regarding specification values.

### 3.1 CURED PHYSICAL CHARACTERISTICS

	<b>RE2039 /HD3719</b>	<b>EE4183 /HD3719</b>	<b>TEST METHOD</b>
Color	Amber	Tan	Visual
Glass Transition (T <sub>g</sub> ), °C	38	45	ASTM D 3386
Coefficient of linear thermal Expansion in/in/°C			
25° - T <sub>g</sub>	99 x 10 <sup>-6</sup>	148 x 10 <sup>-6</sup>	ASTM D 3386
T <sub>g</sub> - 150°C	228 x 10 <sup>-6</sup>	206 x 10 <sup>-6</sup>	
Compressive strength, psi	21,400	12,000	ASTM D 695
Density, lb/cu in.	0.04	0.48	ASTM D 1475
Linear Shrinkage, %	1.3	0.65	ASTM D 2566
Filler Content, %	0	33	ASTM D 2584
Hardness, Shore D	75	82	ASTM D 2240
Tensile strength, psi	2,700	4,850	ASTM D 638
Elongation, %	55	13.4	ASTM D 638
Specific Gravity	1.09	1.34	ASTM D 792
Thermal conductivity			ASTM D 1674
cal x cm/sec cm <sup>2</sup> x °C	4.8 x 10 <sup>-4</sup>	8.7 x 10 <sup>-4</sup>	ASTM D 1674
Flexural strength, psi	2,875	5,425	ASTM D 790
Izod impact strength, Ft – lb/in of notch	0.24	0.36	ASTM D 256
Moisture absorption (24 hr immersion), %	0.78	0.50	ASTM D 570

### 3.2 CURED ELECTRICAL PROPERTIES

	<b>RE2039 /HD3719</b>	<b>EE4183 /HD3719</b>	<b>TEST METHOD</b>
Dielectric strength			ASTM D 149
@ 10 mil thickness, volts/mil	2,000	2,100	
Arc resistance, seconds	70	120	ASTM D 495

	<b>RE2039/HD3719</b>				<b>EE4183/HD3719</b>			
	<b>25°C</b>		<b>105°C</b>		<b>25°C</b>		<b>105°C</b>	
	<b>K</b>	<b>D</b>	<b>K</b>	<b>D</b>	<b>K</b>	<b>D</b>	<b>K</b>	<b>D</b>
100 Hz	3.6	0.043	9.9	3.64	3.6	0.033	9.8	2.800
1 kHz	3.4	0.032	9.0	0.44	3.5	0.024	8.2	0.401
10 kHz	3.1	0.023	7.2	0.128	3.3	0.017	6.6	0.110
Vol. Res.	8 x 10 <sup>14</sup>		4.8 x 10 <sup>9</sup>		1 x 10 <sup>15</sup>		8 x 10 <sup>9</sup>	

K= Dielectric constant by ASTM D 150

D = Dissipation factor by ASTM D 150

Vol. Res. = Volume resistivity in ohm-cm by ASTM D 257

#### 4.0 HANDLING

	<b>RE2039/HD3719</b>	<b>EE4183/HD3719</b>
Mix ratio, parts by weight*	100/100	100/50
Viscosity, cps	2,000	20,000
Pot life, 200 gram mass	3 hrs.	3 hrs.

\*The flexibility of these systems may be increased by increasing amount of hardener. Use up to 50% more for maximum flexibility.

#### CURE SCHEDULE

Recommended cure	Two hours at 60°C (140°F)
Alternate cure	24 - 36 hours at 25°C (77°F)

Some variation in listed values may occur. Customer should determine whether cure other than those listed will give satisfactory results.

**06/2000**

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For additional information in the Americas, please contact one of the following locations:

<b>New York</b>	<b>Canada</b>	<b>Brazil</b>
TEL: 716.372.6300	TEL: 905.814.6511	TEL: 011.55.11.4143.7000
FAX: 716.372.6864	FAX: 905.814.5391	FAX: 011.55.11.4143.7100

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